



PEO Ships: Building an Affordable Future Fleet

Program Executive Officer, Ships

January 13, 2011

The Navy Today



Program Executive Office, Ships

- ***328,496 active duty officers, Sailors and midshipmen***
- ***65,059 selected Reserve Sailors***
- ***5,790 activated reservists***
- ***203,423 civilians***
- ***40,247 Sailors deployed afloat***
- ***287 Deployable Battle Force Ships***
- ***102 ships underway – 36% (away from homeport)***
 - ***Two Aircraft Carriers***
 - ***One Large Deck Amphibious Assault Ship***
- ***98 ships deployed – 34%***



PEO Ships in Design and Construction



Program Executive Office, Ships



Under Contract & Building

To Go (FY 11 & FY 12)

22 LCS	---
3 DDG 51	4 DDG 51
1 DDG 1000	2 DDG 1000
2 Deckhouses	1 Deckhouse
4 LPD	2 LPD
1 LHA	1 LHA
4 T-AKE	3 MLP
10 JHSV	----
1 T-AGM 25	1 SSC
1 T-AGS	2 AGOR
47 Ships	15 Ships

Product Lines

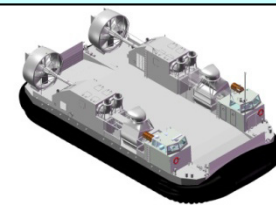







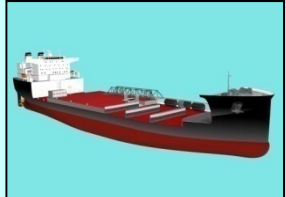







Program Executive Office, Ships

MILESTONES

A

B

Pre-AoA	Materiel Solution Analysis	Technology Development	Engineering & Manufacturing Development	Production & Deployment	Operations & Support
DDGX	AGOR	SSC 	LCS 	LPD 17 	CG 47 
LSDX				T-AKE 1 	BOATS 
LHDX				LHD 8 	DDG 51 
T-AO(X)		MLP 		DDG 1000 	
T-ATF(X)			JHSV 	LHA 6  T-AGS 66  T-AGM 25 	FFG 7 LHD/LSD/LPD LCAC LHA LCC 19 MCM 1 AS 39 / ARS 50 PC 1

PEO Ships Successes (2010)



Program Executive Office, Ships

• 9 Construction Options Awarded

- JHSV 2 and 3, 28 Jan
- T-AKE 13, 26 Feb
- T-AKE 14, 26 Feb
- Egyptian Fast Missile Craft #4, 25 Mar
- JHSV 4 and 5, 13 Oct
- 2 LCS, 29 Dec

• 5 Ships Started Fabrication

- T-AKE 13, 15 Apr
- Egyptian Fast Missile Craft #2, 2 Jun
- JHSV 2, 13 Sep
- T-AGS 66, 22 Sep
- T-AKE 14, 21 Oct

• 5 Keels Laid

- T-AKE 12 (USNS WILLIAM McLEAN), 26 Mar
- Egyptian Navy Fast Missile Craft #1, 7 Apr
- DDG 112 (MICHAEL MURPHY), 18 Jun
- JHSV 1 (USAV SPEARHEAD), 22 Jul
- T-AKE 13 (USNS MEDGAR EVERS), 26 Oct

• 7 Ships Christened

- T-AKE 10 (USNS CHARLES DREW), 27 Feb
- DDG 110 (WILLIAM P. LAWRENCE), 17 Apr
- DDG 111 (SPRUANCE), 5 Jun
- LPD 22 (SAN DIEGO), 12 Jun
- T-AGM 25 (USNS HOWARD O. LORENZEN), 26 Jun
- T-AKE 11 (USNS WASHINGTON CHAMBERS), 11 Sep
- LCS 3 (FORT WORTH), 4 Dec

• 4 Ships Commissioned

- USS INDEPENDENCE (LCS 2), 16 Jan
- USS DEWEY (DDG 105), 6 Mar
- USS JASON DUNHAM (DDG 109), 13 Nov
- USS GRAVELY (DDG 107), 20 Nov

• 4 Ships Delivered

- USNS MATTHEW PERRY (T-AKE 9), 24 Feb
- JASON DUNHAM (DDG 109), 4 Jun
- USNS CHARLES DREW (T-AKE 10), 14 Jul
- GRAVELY (DDG 107), 26 Jul

• 117 FMS Deliveries

- The first Iraqi Patrol Boat (P-301) successfully delivered to Umm Qasr Navy Base on 19 Sep
- Assisted in delivering 40 boats to support disaster relief operations in Pakistan

• 128 Boats and Craft Deliveries

- Includes 3 LCAC SLEPs

• Other Shipbuilding Accomplishments

- SAN DIEGO (LPD 22) Launched, 7 May
- USNS HOWARD O. LORENZEN (T-AGM 25) Launched, 30 Jun
- MLP Advance Design and LLTM Contract, 13 Aug
- 100% of ZUMWALT (DDG 1000) in construction



DoD Procurement

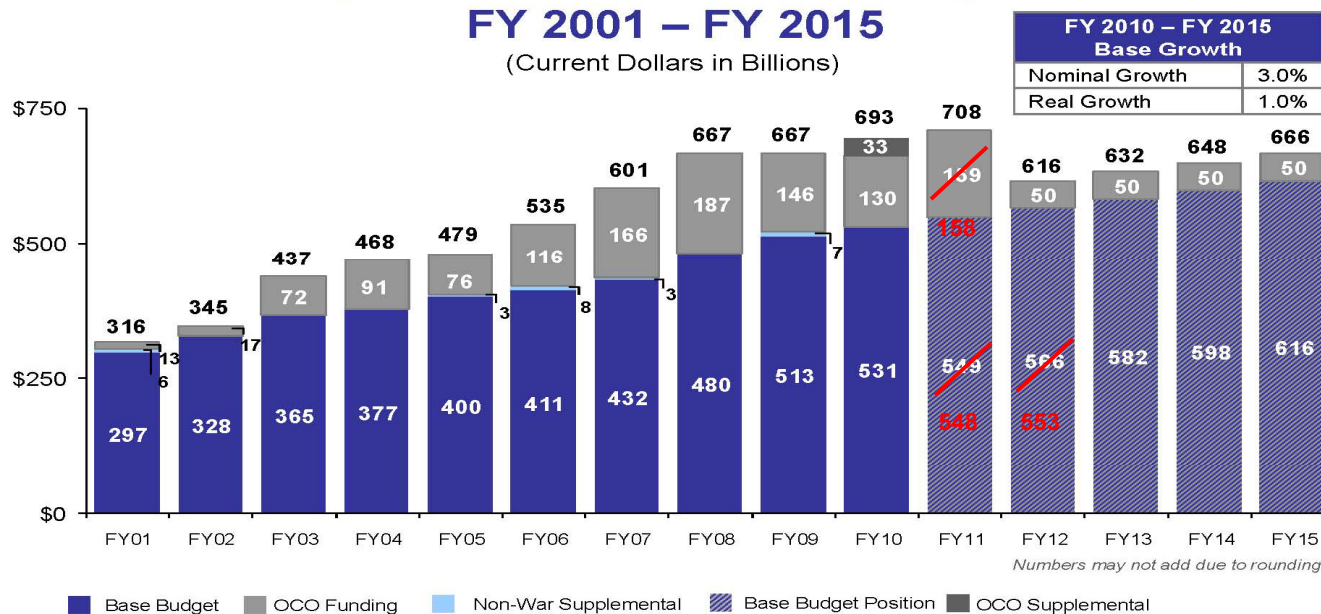


Program Executive Office, Ships

- \$707.3B requested for DoD: \$548.9B base + \$159.3B for wars
- Maintains historically high level of funding in base budget
- FY11 NDAA authorized \$548.2B base and \$158.7 for wars
- Jan 6, 2011 SECDEF noted FY12 base budget would be “about \$553B”

Department of Defense Topline FY 2001 – FY 2015

(Current Dollars in Billions)



Note: FY 2011 – FY 2015 reflects levels included in the President's FY 2011 Budget Request; FY 2009 Non-War Supplemental was appropriated through the American Recovery and Reinvestment Act of 2009

Source: Department of Defense Appropriation Acts FY 2001 – FY 2010, FY 2011 President's Budget documents

February 1, 2010

B02-10-101 v 2.7

2

FY11 Shipbuilding Procurement



Program Executive Office, Ships

	FY10	FY11	FY12	FY13	FY14	FY15	FY11-15
CVN 21	-	-	-	1	-	-	1
SSN 774	1	2	2	2	2	2	10
DDG 1000	-	-	-	-	-	-	0
DDG 51	1	2	1	2	1	2	8
LCS	2	2	3 4	4	4	4	17
LPD 17	-	-	1	-	-	-	1
LHA (R)	-	1	-	-	-	-	1
T-AKE	2	-	-	-	-	-	0
T-ATF	-	-	-	-	-	1	1
MLP	-	1	-	1	-	1	3
JHSV	1	1	1	2	2	2	8
New Construction Total	7	9	8	12	9	12	50
Total New Construction (\$B)	\$ 12.4	\$ 13.8	\$ 13.4	\$ 13.8	\$ 14.4	\$ 17.0	\$ 72.4
LCAC SLEP	3	4	4	4	4	4	20
Oceanographic Ships	-	1	1	-	-	-	2
Ship to Shore Connector *	-	1	-	1	2	4	8
Moored Training Ships	-	-	-	-	-	1	1
CVN RCOH	-	-	-	1	-	-	1
Total Shipbuilding (\$B)	\$ 15.0	\$ 16.1	\$ 15.0	\$ 16.8	\$ 17.4	\$ 18.9	\$ 84.3

* Lead SSC is funded in RDT&E

Continue to improve confidence in shipbuilding



Program Executive Office, Ships

• Control Costs

- Design Maturity
- Technical Maturity
- Contract Stability
- Workforce Development
- Platform Commonality
- Design for Affordability
- Requirements vs. Cost Trades Early in the Program
- Acquisition Strategies

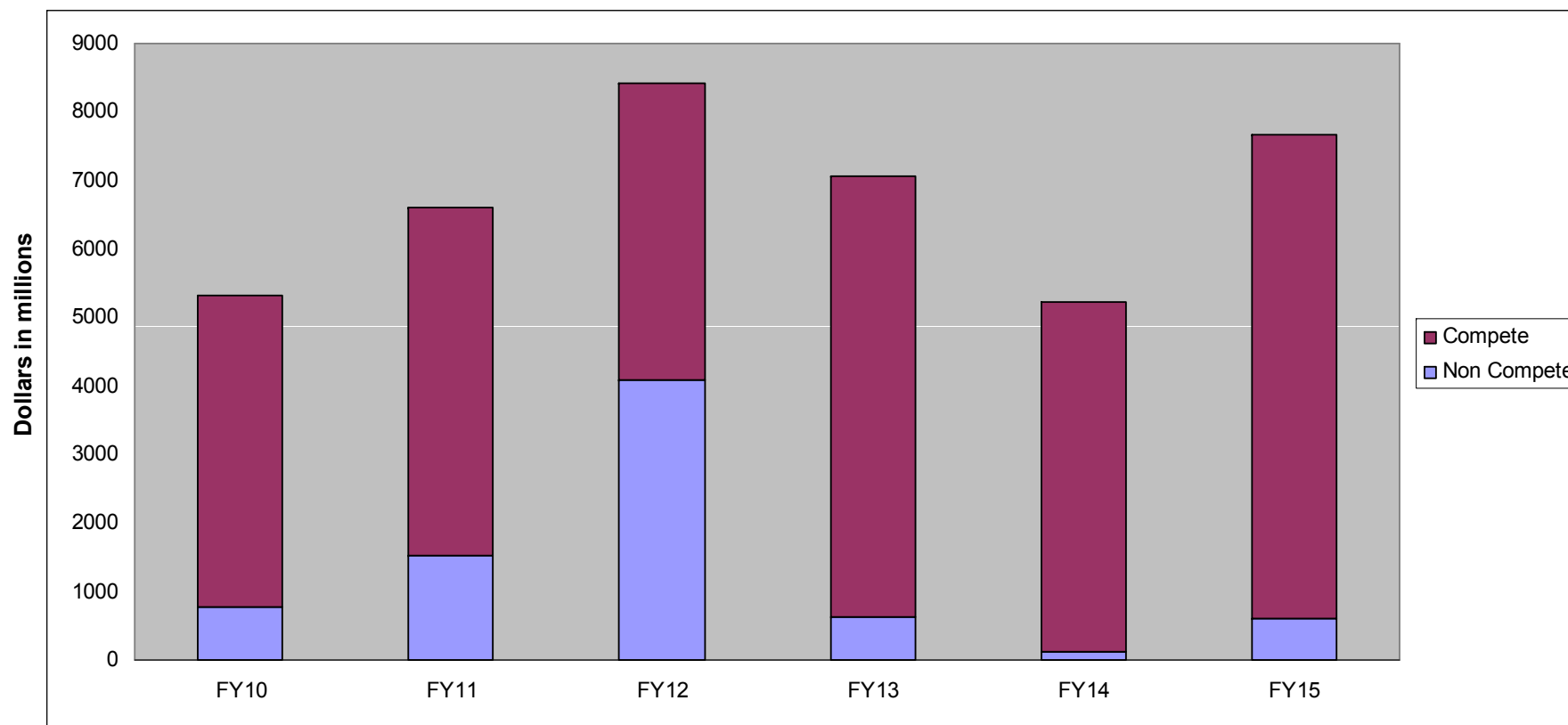
• Reduce Costs

- Competition
- Serial Production
- Facility Investment
- Work Process Improvements
- Affordability Areas
- Smarter Buyer

Competition



Program Executive Office, Ships



* Based on PB11 FYDP

- Includes MSC and special mission ships (e.g., T-AKE, MLP, T-ATF) and SSC (lead ship in RDTE)
- Does not include FMS
- Accounts for new LCS Acquisition Strategy
- Does not include the ~100 average per year procurement of small boats and craft for U.S. and Foreign navies
- Does not include aircraft carriers or submarines

Control Costs – Contract Structure



Program Executive Office, Ships

Cost Plus

- LCS 1
- LCS 2

- LPD 17
- LPD 18
- LPD 19
- LPD 20

- DDG 1000

Fixed Price

- DDG 96
- DDG 97
- DDG 98
- DDG 99
- DDG 100
- DDG 101
- DDG 102
- DDG 103
- DDG 104
- DDG 105

- DDG 106
- DDG 107
- DDG 108
- DDG 109
- DDG 110
- DDG 111
- DDG 112

- JHSV 1
- JHSV 2
- JHSV 3

- LCS 3
- LCS 4

- LHA 6

- T-AGM

- LPD 21
- LPD 22
- LPD 23
- LPD 24
- LPD 25
- LPD 26

- DDG 1001
- DDG 1002

- T-AKE 1
- T-AKE 2
- T-AKE 3
- T-AKE 4
- T-AKE 5
- T-AKE 6
- T-AKE 7
- T-AKE 8
- T-AKE 9
- T-AKE 10
- T-AKE 11
- T-AKE 12

- LHA 7

- LPD 27

- DDG 113
- DDG 114
- DDG 115
- DDG 116
- DDG 117
- DDG 118
- DDG 119
- DDG 120
- DDG 121

- MLP 1
- MLP 2
- MLP 3

- AGOR 1
- AGOR 2

- JHSV 4
- JHSV 5
- JHSV 6
- JHSV 7
- JHSV 8
- JHSV 9
- JHSV 10

- T-AKE 13
- T-AKE 14

• LCS 5	LCS 15
• LCS 6	LCS 16
• LCS 7	LCS 17
• LCS 8	LCS 18
• LCS 9	LCS 19
• LCS 10	LCS 20
• LCS 11	LCS 21
• LCS 12	LCS 22
• LCS 13	LCS 23
• LCS 14	LCS 24

FY00-FY09

FY10-FY15

Littoral Combat Ships



Program Executive Office, Ships

• Cost Control Initiatives

- Dual Award leverages competition, fixed price contracting and design stability
- Increases near-term ship procurement
- \$2.9 Billion (TY) in savings through FY16
- Takes advantage of hot production lines
- Creates opportunities for future competition



• Program Status

- USS FREEDOM (LCS 1) and USS INDEPENDENCE (LCS 2) currently completing post-delivery tests and evaluations
- FORT WORTH (LCS 3) launched Dec 2010 at 80% complete
- Awarded contracts for LCS 5 and LCS 6 on 29 Dec with 18 more LCS to follow



ZUMWALT (DDG 1000) Class



Program Executive Office, Ships

• Cost Control Initiatives

- DDG 1000 design was more mature (80%+) than any lead ship surface combatant at the start of construction
- Design complete and onsite change control initiatives in place at BIW and NG
- Bath Iron Works fully leveraging Ultra Hall to build fully outfitted units



• Program Status

- ZUMWALT (DDG 1000) started fabrication Feb 2009
 - 100% of the lead ship is in construction
 - Lead ship is approximately 30% complete
 - Keel laying Fall 2011
 - Delivery in 2014
- MICHAEL MONSOOR (DDG 1001) started fabrication, Mar 2010
 - Overall, the ship is approximately 12% complete



Joint High Speed Vessel (JHSV)



Program Executive Office, Ships

• Cost Control Initiatives

- Designed to commercial standards
- Conducted rigorous production readiness review prior to start of construction, ensuring design maturity greater than 85%
- Newly constructed Modular Manufacturing Facility will aid in production of high quality ship modules and improve production efficiencies
 - Improve capacity, production planning and process control
 - Reduce construction duration, lower production costs, and mitigate existing production process and control risks



• Program Status

- Detail design and construction contract for ten ships with five options exercised
- USAV Spearhead (JHSV 1) keel laying held Jul 2010
 - Currently 48% complete
- USNS Vigilant (JHSV 2) started production in Sep 2010
- Contract for JHSV 4 and JHSV 5 awarded Oct 2010



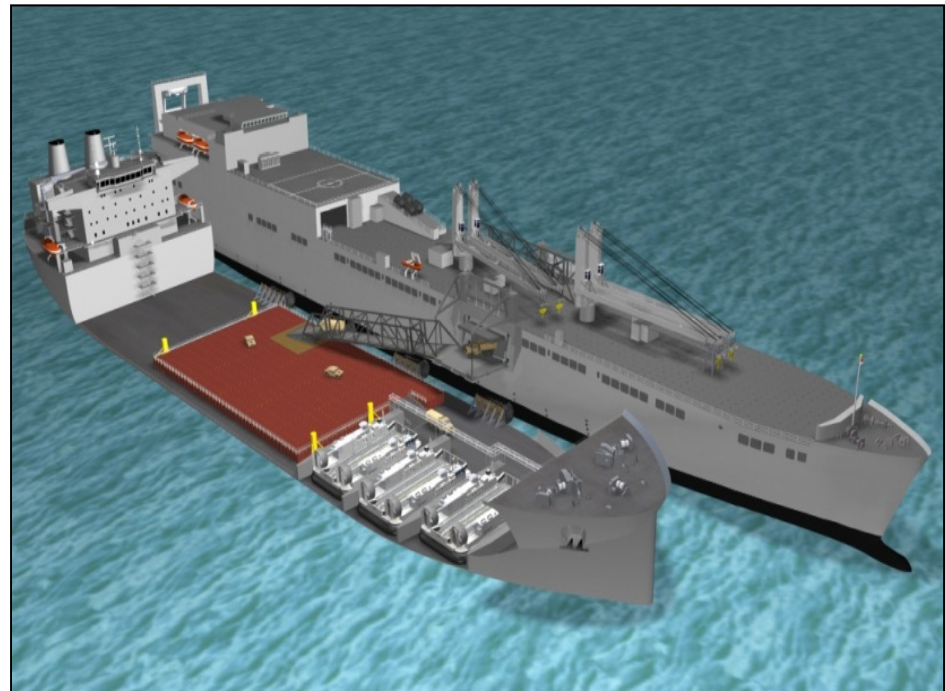
Mobile Landing Platform



Program Executive Office, Ships

• Cost Control Initiatives

- Performed requirements versus cost trade-offs to achieve 80% of original MLP capability at 40% of the cost
- Pursuing a concurrent design/production engineering approach to ensure a high degree of design and production planning maturity prior to start of construction to minimize cost and schedule risk
- Government-led contract for deck interface
 - Refine and translate the requirements into the design and specifications
 - Competing the contract



• Program Status

- Contract Award after Milestone B in 2nd Quarter

USS MAKIN ISLAND (LHD 8)



Program Executive Office, Ships

• Cost Reduction Initiatives

- Hybrid gas turbine/diesel-electric propulsion; saved \$2.5M in fuel costs during transit to homeport
- Over the course of the ship's lifecycle, the Navy expects to see a savings of more than \$250M
- Highlights SECNAV's commitment to energy efficiency
- Propulsion system will also be used in future ship construction

• Program Status

- Delivered in April 2009
- Commissioned in Oct 2009
- Successfully completed FCT late Oct 2010



ARLEIGH BURKE (DDG 51)



Program Executive Office, Ships

• Cost Reduction Initiatives

- Restarting serial production
- Shipyard facility investments allowing proper work sequencing
- Shipbuilder Material
 - Maximizing competitive procurements
 - Utilizing Advance Procurement funds to obtain Economic Order Quantity savings
- Main Reduction Gear
 - In 2009, as part of the continued production of DDG 51 Class, the Navy initiated a full and open competition to procure MRGs for DDG 113-115
 - On 16 Jun 2010, Navy awarded an \$80.2M contract to Philadelphia Gear Corporation for DDG 51 Class MRG. Contract includes options which, if exercised, would bring the cumulative value of this contract to \$425.9M.



• Program Status

- Three ships of the original 62-ship procurement are currently finishing construction
- Two ships (USS Jason Dunham and USS Gravelly) were commissioned in 2010.
- Restart of production of this class has begun, with DDG 113 design, production, engineering work, and long lead material procurement starting in 2010.



Ship to Shore Connector



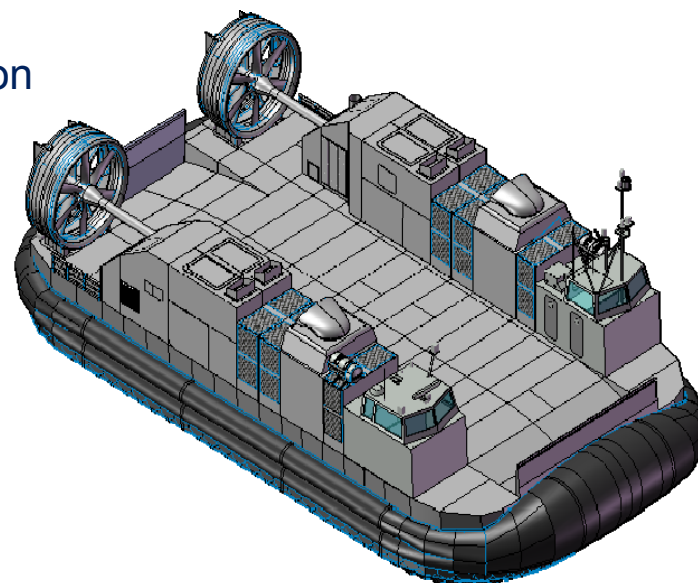
Program Executive Office, Ships

• Cost Reduction Initiatives

- SSC T&E Risk Reduction & Affordability Assurance Effort resulted in Test agencies' preliminary agreement to a tailored test program:
- Proposed way ahead will maintain craft production schedule and affordability of the program while meeting test and evaluation objectives

• Program Status

- Analysis of Alternatives approved
- Milestone A Decision 7 May 2009
- Capabilities Development Document (CDD) validated on 10 June 2010
- Technical Data Package approved 7 July 2010
- Pre-solicitation Notice for Test and Training Craft and Production Units issued 9 Dec 2010
- RFP Release for Test and Training Craft and Production Units scheduled for Jan 2011
- Milestone B Decision and Detail Design and Construction Award are anticipated 4Q FY11



LEWIS AND CLARK (T-AKE 1) Class



Program Executive Office, Ships

• Cost Reduction Initiatives

- NASSCO continues to make substantial reductions in labor hours from hull to hull on the program (T-AKE 7 produced at less than 50% of the man-hours and 37% in cycle time reduction from T-AKE 1)
- T-AKEs have been delivering approx 2-3 months early (T-10 delivered eight months early)
- As the class has entered serial production, NASSCO has extracted increased learning and production efficiencies
- Significant capital has been invested in the yard for production improvements

• Program Status

- T-AKEs 1-10 have been designed, constructed, and delivered to MSC
- First eight ships have deployed
- The final four ships of the class (T-AKEs 11-14) are currently under construction at NASSCO
 - T-AKE 11 launched Sept 2010, on track to deliver 23 Feb 2011
 - T-AKE 12 -70% complete
 - T-AKE 13 -25% complete
 - T-AKE 14 started construction Oct 2010

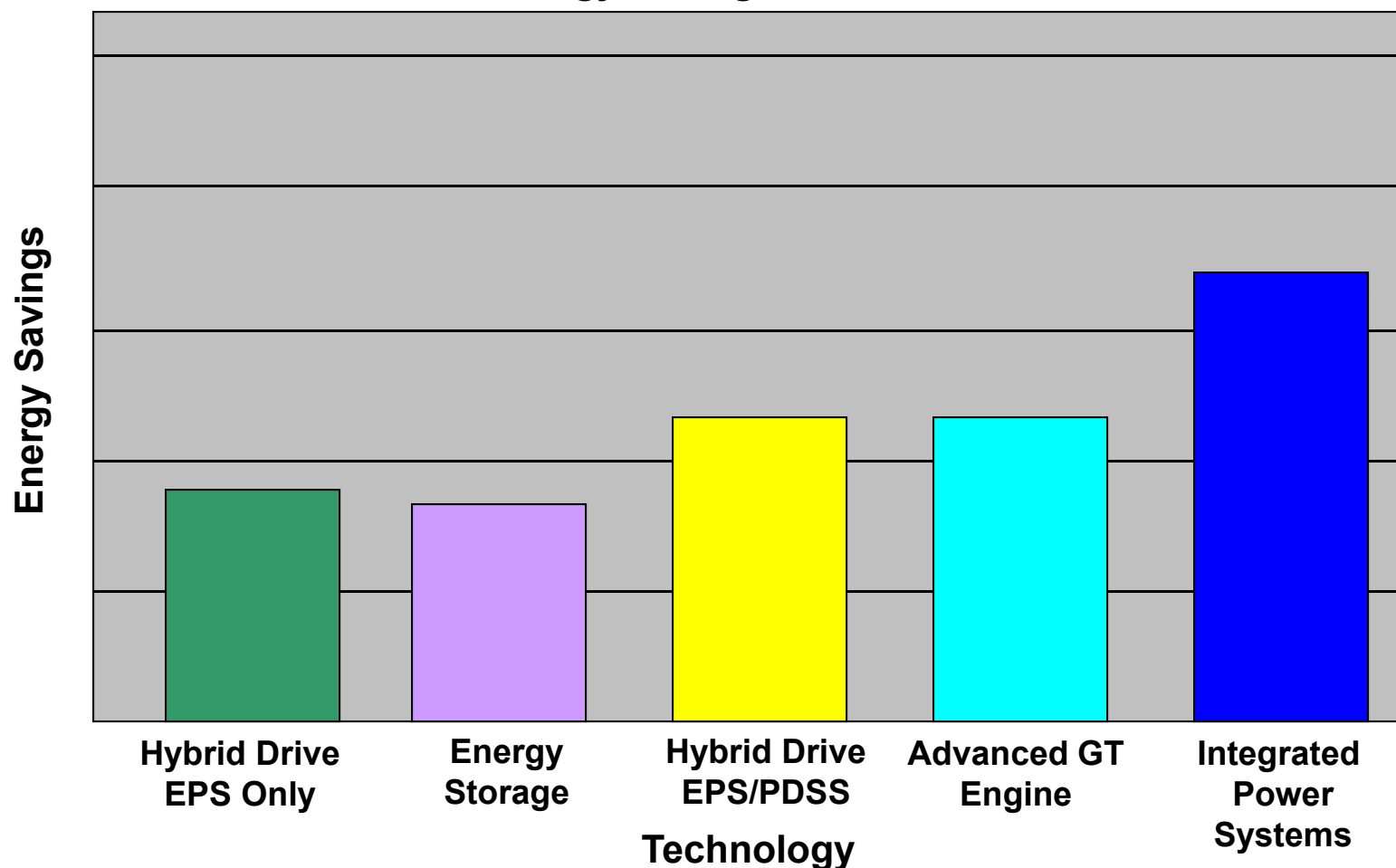


Electric Ships Office Energy-Saving Initiatives

Program Executive Office, Ships



Energy Savings Initiatives



Some technologies also provide Maintenance Savings

Shipbuilding: Moving Forward



Program Executive Office, Ships

- **Competition**
- **Fixed Price contracts**
- **Mature designs before beginning construction**
- **Robust capital improvement spending**
- **Production plans that build ships on time and on cost**
- **Build the first ship like a follow ship**
- **Measuring productivity improvements from unit to unit rather than ship by ship**
- **A ruthless drive for affordability and efficiency**
- **Measuring and evaluating performance of the companies and suppliers, not the shipbuilding programs**

A 313-Ship Navy is the requirement – 288 Ship in Service today